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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/533,392

04/29/2005

Tetsuroh Nakamura

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EXAMINER

AL HASHIMI, SARAH

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 09/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/533,392

Applicant(s)

NAKAMURA ET AL.

Examiner

Sarah Al-Hashimi

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 04/29/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. **Claims 2,7,31** recite the limitations "the surface" in line 3 of **claim 2**, "the specific direction" in line 2 of **claim 7**, "the length" in line 2 of **claim 31**. There is insufficient antecedent basis for this limitation in the claim. "The surface" is an unclear statement in **claim 2** because the specification and drawings do not clarify what surface is meant for the purpose of examination of the claim. For the purpose of examination the statement will be omitted from the claims.

2. **Claims 19&37** are objected to because of the following informalities: spelling errors such as "image wiring" in claim 19 and "mans" in claim 37. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1-39** are rejected under 35 U.S.C. 102(e) as being anticipated by Gyoutoku US 2005/0248267.

Gyoutoku teaches:

Claim 1: A light source of image writing apparatus including a light emitting

Element (abstract lines 1-3 “organic electroluminescence element with a large emitted light quantity, an exposure unit and an image-forming apparatus both using the element”), and a light transmitting (fig 2 #6g fiber array) means forming an image on a photosensitive drum (fig 3 # 10a) by light emitted from the light emitting element, the light source comprising: a converting means for converting an advancing direction of the light (fig 2 #6f prism); and the light transmitting means for forming the image on the photosensitive drum by the light of which advancing direction is converted by the converting means (para 68 line12-15 “prisms deflect light emitted from .. elements, fiber arrays collect the lights from the prisms” to form an image on the drum).

Claim 2: The light source of image writing apparatus according to claim 1, wherein the light emitting element is layered on a surface of a substrate so as to emit the light in a direction perpendicular to the surface (fig 2 #6d element and #6b substrate); and the converting means is formed on the light emitting element (fig 2 prism 6f is above light emitting element 6d) .

Claim 3: The image writing apparatus according to claim 1, wherein the converting means is formed on a surface of a substrate (fig 2 #6f is the prism and 6b is the substrate); and the light emitting means is formed on the converting means so as to emit the light toward the converting means (fig 16 #132 on #129 converting means).

Claim 4: The light source of image writing apparatus according to claim 1, wherein the light emitting element is formed on a surface of a substrate so as to emit the light in a direction perpendicular to the surface (fig 2 #6d on 6b emits light perpendicular to

surface of substrate); and the converting means is formed on another surface of the substrate (fig 2 #6f on other side of #6b).

Claim 5: The light source of image writing apparatus according to claim 1, wherein the converting means is a prism for reflecting the light source toward a specific direction (Fig 2 6f prism reflects light through 6g and 6h).

Claim 6: The light source of image writing apparatus according to claim 1, wherein the converting means is a light guide to lead the light to a specific direction (fig 16 #129 arrow points to direction).

Claim 7: The light source of image writing apparatus according to claim 4, wherein the specific direction is parallel to the substrate (fig 2 the arrow points in a direction parallel to the substrate).

Claim 8: The light source of image writing apparatus according to claim 1, wherein the converting means converts the advancing direction of the light to a normal direction against the photosensitive drum (Para 68 line16-17 the light collected from the prisms is in a direction such that "light from the fiber arrays to the sub-scanning direction" which is normal to the photosensitive drum) .

Claim 9: The light source of image writing apparatus according to claim 1, wherein the image writing apparatus is provided with a plurality of photosensitive drums arranged in series (fig 3 #10a-13a are drums).

Claim 10: The light source of the image writing apparatus according to claim 1, wherein the light emitting element consists of an organic electro luminescence (abs line 1 "organic electroluminescence element").

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Claim 11: the light source comprising: a directivity means for imparting the directivity to the light emitted from the light emitting element (fig 16 #129 wave guide); and the light transmitting means (fig 2 #6g fiber array) for transmitting to the photosensitive drum the light to which the directivity is imparted by the directivity means.

Claim 12: The light source of image writing apparatus according to claim 11, wherein the light emitting element and the directivity means are formed in one piece (fig 16 #132 and #129).

Claim 13: The light source of image writing apparatus according to claim 11, wherein the light transmitting means is a lens; and the directivity means limits the advancing direction of the light within a range of an angle aperture of the lens (para 163 lines 4-6 "An angle conversion structure can also be achieved by bonding micro lenses on the waveguide surface" enables the directivity means to limit the advancing of the light governed by the aperture of the lens).

Claim 14: The light source of image writing apparatus according to claim 13, wherein the directivity means imparts the directivity to the light by reflecting the light in a light guide according to a difference between the refractive index inside the light guide and the refractive index outside the light guide (para 158 lines 1-6 "the waveguide ...comprises a transparent core and a clad...with a refractive index smaller than that of core..but since clad can be substituted by air layer" the waveguide has a different refractive index inside than outside).

Claim 15: The light source of image writing apparatus according to claim 14, wherein the light guide has a mesa structure (Para 193 “a mesa structure utilizing total reflection”).

Claim 16: The light source of image writing apparatus according to claim 15, wherein the light emitting element is disposed on an upper surface of the mesa structure (fig 16 #132 above #129); a bottom of the mesa structure is disposed on a surface of a transparent substrate (Para 138 “on the substrates are mounted prisms” which are also a directivity means that have a mesa structure); and the light transmitting means is disposed between another surface of the transparent substrate and the photosensitive drum (fig 2 6g fiber array is between photosensitive drum and substrate).

Claim 17: The light source of image writing apparatus according to claim 13, wherein the directivity means imparts the directivity to the light according to a difference between the refractive index inside the light guide and the refractive index outside the light guide when the light is emitted from the light guide inside to the outside (para 158 lines 1-6 “the waveguide ...comprises a transparent core and a clad...with a refractive index smaller than that of core..but since clad can be substituted by air layer” the waveguide has a different refractive index inside than outside).

Claim 18: The image wiring apparatus according to claim 17, wherein the light guide is a beads sheet provided with a plurality of projections on a surface of a transparent substrate; the light emitting element is disposed on another surface of the beads sheet; and the light transmitting means is disposed between the surface of the beads sheet and the photosensitive drum (fig #19 beads #136, #132 above beads and fig 2

fiber array is between drum and substrate and directivity means where in directivity means is fig 19 in place of prism such that fiber array is disposed between beads and drum).

Claim 19: The light source of image wiring means according to claim 17, wherein the light guide is a micro lens (para 163 lines 4-6 "An angle conversion structure can also be achieved by bonding micro lenses on the waveguide surface"); the light emitting element is disposed on a surface of a transparent substrate (abs "element on substrate); the micro lens is disposed between another surface of the transparent substrate and the light transmitting means (fig 19 #129 is on other surface of anode which is provided on a substrate and the light transmitting means in fig 2 is opposite the directivity means which is the function of the microlens); and the light transmitting means is disposed between the micro lens and the photosensitive drum (fig 2 6g fiber array is between photosensitive drum and substrate).

Claim 20: The light source of image writing apparatus according to claim 11, wherein the light emitting element consists of an organic electro luminescence (abs line 1 "organic electroluminescence element").

Claim 21: the light source comprising: the light emitting element of which luminous area is larger than a pixel of the latent image (para 154 "light-emitting layer 132 radiates omni-directionally" resulting in a luminous area large than a pixel of the latent image); and a condensing means for condensing the light emitted from the light emitting element and forming a section of the light on the photosensitive drum to be equal to an area of a pixel of the latent image (fig 2 #6h cylindrical lens).

Claim 22: The light source of image writing apparatus according to claim 21, wherein the light emitting element and the condensing means are formed in one piece (fig 2 the exposure unit contains both the light emitting element and condensing means).

Claim 23: The light source of image writing apparatus according to claim 21, wherein the condensing means condenses the light by reflecting the light in a light guide according to a difference between the refractive index inside the light guide and the refractive index outside the light guide (para 193 "a cylindrical lens .. may be provided for all of the light emerging planes" reflecting light in the light guide according to the difference between the refractive index inside the guide and outside).

Claim 24: The light source of image writing apparatus according to claim 23, wherein the light emitting element is disposed on a surface of the light guide (fig 16 #132 above #129); another surface of the light guide is disposed on a surface of the transparent substrate (fig 19 #129 is on other surface of anode which is provided on a substrate); and the light transmitting means is disposed between the light guide and the photo sensitive drum (fig 2 6g fiber array is between photosensitive drum).

Claim 25: The light source of image writing apparatus according to claim 23, wherein the light emitting element is disposed on a surface of the transparent substrate (abs "element on substrate); the light guide is disposed on another surface of the transparent substrate (fig 19 #129 is on other surface of anode which is provided on a substrate); and the light transmitting means is disposed between the light guide and the photosensitive drum (fig 2 6g fiber array is between photosensitive drum).

Claim 26: The light source of image writing apparatus according to claim 21, wherein the condensing means condenses the light by reflecting the light when the light is emitted from the inside of the light guide to the outside according to a difference between the refractive index inside the light guide and the refractive index outside the light guide (para 193 "a cylindrical lens .. may be provided for all of the light emerging planes" reflecting light in the light guide according to the difference between the refractive index inside the guide and outside).

Claim 27: The light source of image writing apparatus according to claim 26, wherein the condensing means is a cylindrical lens or a micro lens (fig 2 #6h).

Claim 28: The light source of image writing apparatus according to claim 26, wherein the light emitting element is disposed on a surface of a transparent substrate (abs "element on substrate); the light transmitting means is disposed between another surface of the transparent substrate and the condensing means (fig 2 #6h condensing means #6g fiber array #6b substrate); the condensing means is disposed between the light transmitting means and the photosensitive drum (fig 2 #6h condensing means #6g fiber array are facing photosensitive drum as indicated by arrow in fig).

Claim 29: The light source of image writing apparatus according to claim 26, wherein the light emitting element is disposed on a surface of a transparent substrate substrate (abs "element on substrate); the condensing means is disposed between another surface of the transparent substrate and the light transmitting means (fig 2 #6h condensing means #6g fiber array #6b substrate); and the light transmitting means is disposed between the condensing means and the photosensitive means (fig 2 #6h

condensing means #6g fiber array are facing photosensitive drum as indicated by arrow in fig).

Claim 30: The light source of image writing apparatus according to claim 21, wherein the light emitting element consists of an organic electro luminescence (abs line 1 "organic electroluminescence element").

Claim 31: The light source of image writing apparatus according to claim 21, wherein the length of the light emitting element in the sub scanning direction is longer than the length of the pixel in the sub scanning direction (fig 18 depicts the apparatus where #132 is the light emitting element. Although pixel size is not displayed in the figure, the length of the light emitting element depicted in the figure in the subscanning direction is considerably long in comparison to a pixel produced by the invention).

Claim 32: the light emitting element comprises a flat luminous unit (fig 16 #132 rectangular shape); and the light transmitting means and the light emitting element are formed in one piece (fig 2 shows the light emitting element and 6g fiber array in the same piece).

Claim 33: The light source of image writing apparatus according to claim 32, wherein the flat luminous unit is an organic electro luminescence (abs line 1 "organic electroluminescence element").

Claim 34: The light source according to claim 33, wherein the light transmitting means is a fiber lens alley including a plurality of single lenses (fig 2 #6g-9g).

Claim 35: The light source according to claim 34, wherein one of the light emitting elements corresponds to one of the single lenses.

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Claim 36: The light source according to claim 34, wherein one of the light emitting elements corresponds to a plurality of the single lenses (para 193 "plural lenses may be provided per one light emerging plane").

Claim 37: The light source according to claim 33, wherein a directivity means for orienting the advancing direction of each light from the light emitting element to a specific direction is provided between the light emitting element and the light transmitting means (fig 2 #6f prism between light emitting means and light transmitting means); and the light transmitting means, the directivity means, and the light emitting element are formed in one piece (fig 2 is one piece).

Claim 38: The light source according to claim 37, wherein the directivity mean has a mesa structure (Para 193 "a mesa structure" in reference to directivity means), and the upper surface of the mesa structure is provided with the light emitting element (fig 16 #132 is above #129).

Claim 39: The light source according to claim 37, wherein the directivity means is a light guide for reflecting the light incident to the directivity means within the directivity means once or plural times (fig 19 arrows in #129 indicate a series of reflections occurring in the directivity means).

Conclusion

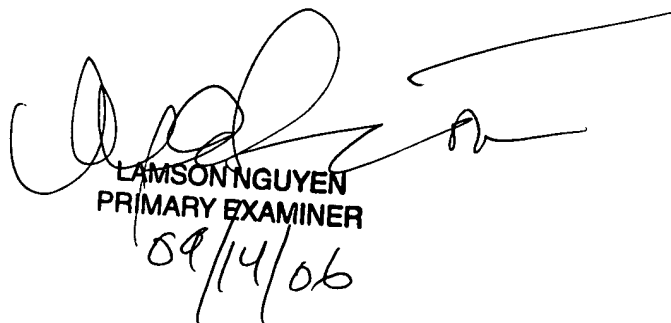
5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Izumi 5,452,385.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah Al-Hashimi whose telephone number is 571 272 7159. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on 571 272 2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

S.A.


LAMSON NGUYEN
PRIMARY EXAMINER
09/14/06